

Notice of Allowability

Application No.

10/715,352

Examiner

Midys Rojas

Applicant(s)

YONEDA, MASATO

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to the communication filed on 2/6/07.
2. ☒ The allowed claim(s) is/are 21-31 and 33-37.
3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some* c) ☐ None of the:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO/SB/08),
Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit
of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☒ Interview Summary (PTO-413),
Paper No./Mail Date 3/1/07.
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____.

DETAILED ACTION

EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Christopher M. Tobin (40,290) on March 1, 2007.

The application has been amended as follows:

21. (Currently Amended) A data retrieval device, comprising:

a rearrangement means, which applies a first rearranging of a first data group that includes a plurality of rule data arranged in an order of priority of the rule data, said first rearranging being a sequential ordering according to ~~the~~ a numerical value of the rule data;

an assignment means for grouping the rearranged first data group to provide a plurality of memory blocks composed of content addressable memory, the plurality of memory blocks respectively having an assigned range corresponding to the rearranged first data group, wherein said rearrangement means applies a second rearranging within each of the plurality of memory blocks, said second rearranging being a priority ordering according to said order of priority of the rule data; and

a block selection means, for specifying one of the plurality of memory blocks to provide a specified memory block, wherein said specifying is based upon a comparison of input retrieval data to the assigned ranges of the plurality of memory blocks.

22. (Currently Amended) The data retrieval device of claim 21, wherein only the

specified memory block is activated at the time of retrieval, with other blocks from the plurality of memory blocks not being activated, such that a power consumption at the time of retrieving is reduced.

25. (Currently Amended) The data retrieval device as set forth in claim 21, ~~wherein said plurality of memory blocks are composed of content addressable memory,~~ and further comprising a retrieval controlling unit that performs content address retrieving by comparing said input retrieval data to the assigned ranges of the plurality of memory blocks and outputs an address of said memory block hit by the content address retrieving.
26. (Currently Amended) The data retrieval device as set forth in claim 22, ~~wherein said plurality of memory blocks are composed of content addressable memory,~~ and further comprising a retrieval controlling unit that performs content address retrieving by comparing said input retrieval data to the assigned ranges of the plurality of memory blocks and outputs an address of said memory block hit by the content address retrieving.
27. (Currently Amended) The data retrieval device as set forth in claim 23, ~~wherein said plurality of memory blocks are composed of content addressable memory,~~ and further comprising a retrieval controlling unit that performs content address retrieving by comparing said input retrieval data to the assigned ranges of the plurality of memory blocks and outputs an address of said memory block hit by the content address retrieving.
28. (Currently Amended) The data retrieval device as set forth in claim 24, ~~wherein said plurality of memory blocks are composed of content addressable memory,~~ and further comprising a retrieval controlling unit that performs content address retrieving by comparing said input retrieval data to the assigned ranges of the plurality of memory blocks and outputs an address of said memory block hit by the content address retrieving.
29. (Currently Amended) A data retrieval method, the method comprising:

applying a first rearranging of a first data group that includes a plurality of rule data arranged in an order of priority of the rule data, said first rearranging being a sequential ordering according to ~~the~~ a numerical value of the rule data;

grouping the rearranged first data group to provide a plurality of memory blocks composed of content addressable memory, the plurality of memory blocks respectively having an assigned range corresponding to the rearranged first data group;

applying a second rearranging within each of the plurality of memory blocks, said second rearranging being a priority ordering according to said order of priority of the rule data; and

specifying one of the plurality of memory blocks to provide a specified memory block, wherein said specifying is based upon a comparison of input retrieval data to the assigned ranges of the plurality of memory blocks.

32. (Canceled).

33. (Currently Amended) A data retrieval apparatus, the apparatus comprising:

a retrieval control unit, which applies a first rearranging of a first data group that includes a plurality of rule data arranged in an order of priority of the rule data, said first rearranging being a sequential ordering according to ~~the~~ a numerical value of the rule data, and which groups the rearranged first data group to provide a plurality of memory blocks composed of content addressable memory, the plurality of memory blocks respectively having an assigned range corresponding to the rearranged first data group, and which applies a second rearranging within each of the plurality of memory blocks, said second rearranging being a priority ordering according to said order of priority of the rule data; and

a block selection unit, in communication with the retrieval control unit, which specifies one of the plurality of memory blocks to provide a specified memory block, wherein said specifying is based upon a comparison of input retrieval data to the assigned ranges of the plurality of memory blocks.

37. (Currently Amended) The data retrieval apparatus of claim 33, wherein ~~said plurality of memory blocks are composed of content addressable memory~~, and the retrieval controlling unit performs content address retrieving by comparing said input retrieval data to the assigned ranges of the plurality of memory blocks and outputs an address of said memory block hit by the content address retrieving.

Allowable Subject Matter

2. The following is an examiner's statement of reasons for allowance:

Regarding Claim 21, the Prior Art relied upon does not teach nor suggest in the claimed combination a data retrieval device, comprising: a rearrangement means, **which applies a first rearranging of a first data group** that includes a plurality of rule data arranged in an order of priority of the rule data, said first rearranging being a sequential ordering according to a numerical value of the rule data; in combination with an assignment means for grouping the rearranged first data group to provide a plurality of memory blocks **composed of content addressable memory**, the plurality of memory blocks respectively having an assigned range corresponding to the rearranged first data group, **wherein said rearrangement means applies a second rearranging within each of the plurality of memory blocks**, said second rearranging being a priority ordering according to said order of priority of the rule data.

Regarding Claim 29, the Prior Art Relied upon does not teach nor suggest in the claimed combination a data retrieval method, the method comprising: **applying a first rearranging of a first data group that includes a plurality of rule data** arranged in an order of priority of the rule data, said first rearranging being a sequential ordering according to a numerical value of the rule data; in combination with grouping the rearranged first data group to provide a plurality of memory blocks **composed of content addressable memory**, the plurality of memory blocks

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respectively having an assigned range corresponding to the rearranged first data group; and **applying a second rearranging within each of the plurality of memory blocks**, said second rearranging being a priority ordering according to said order of priority of the rule data.

Regarding Claim 33, the Prior Art relied upon does not teach nor suggest in the claimed combination a data retrieval apparatus, the apparatus comprising: a retrieval control unit, which **applies a first rearranging of a first data group that includes a plurality of rule data** arranged in an order of priority of the rule data, said first rearranging being a sequential ordering according to a numerical value of the rule data, and which groups the rearranged first data group to provide a plurality of memory blocks **composed of content addressable memory**, the plurality of memory blocks respectively having an assigned range corresponding to the rearranged first data group, and **which applies a second rearranging within each of the plurality of memory blocks**, said second rearranging being a priority ordering according to said order of priority of the rule data.

Darnell et al. (6,745,280) discloses arranging entries within a CAM such that entries having the same priority weight value are within a contiguous memory portion. Darnell does not teach rearranging the entries according to a first rearranging, grouping the rearranged entries into memory blocks, and applying a second rearranging of the data within the plurality of memory blocks.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

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Conclusion


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Midys Rojas whose telephone number is (571) 272-4207. The examiner can normally be reached on M-F 5:30am - 4:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sanjiv Shah can be reached on (571) 272-4098. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.


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